LEVEL UP 2023

Our Understanding of the Patient Journey Through the Health System

Leveling Up Our understanding of the patient journey through the health system

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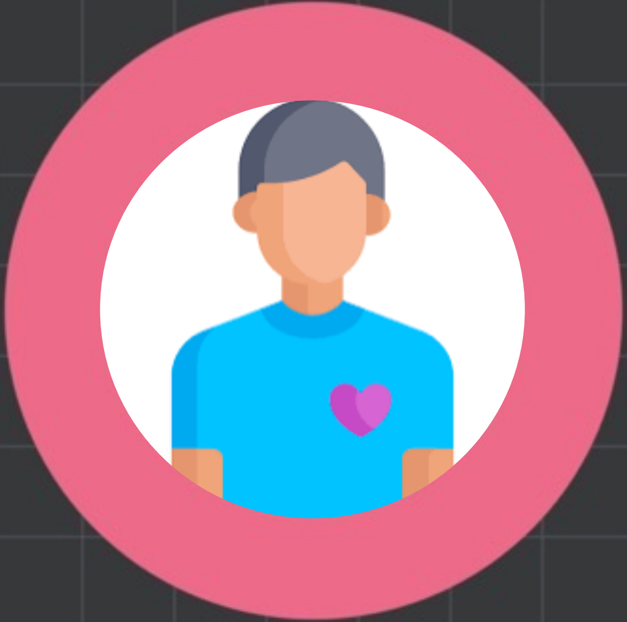

Our Role In Patient Care
Using Data

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Using Data

High-level insights

Granular and intractable

Risk adjustment

IT'S TIME TO UP YOUR GAME

Using Data

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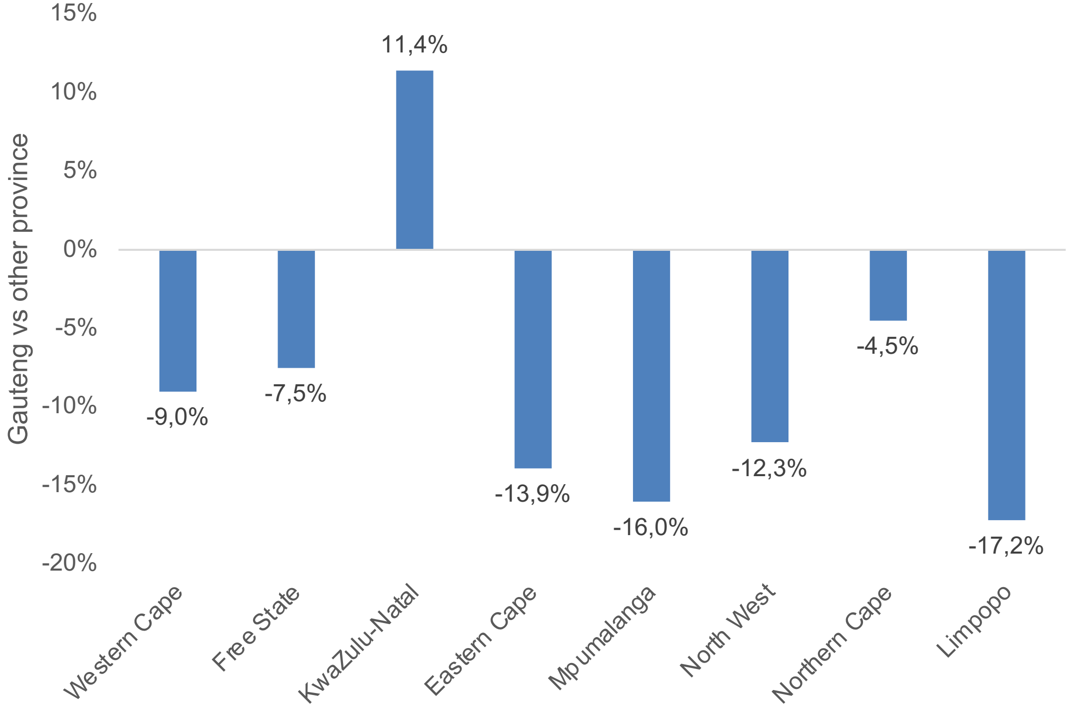
Using Data

There are variations beyond just risk profile that have to be adjusted for.



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Our Tools

Diagnosis Related Grouper

Admission

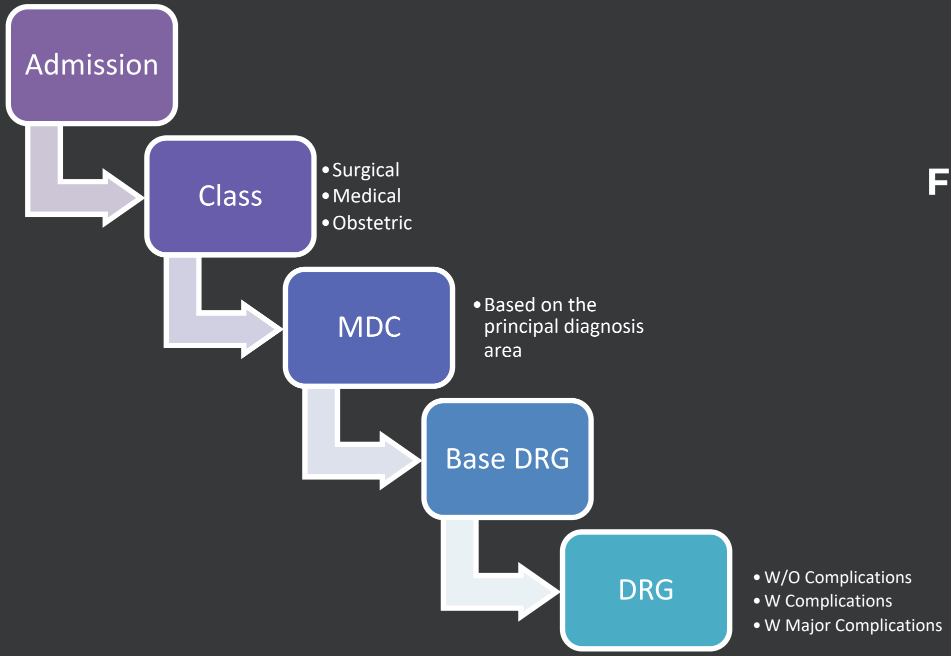
Class
- Surgical
- Medical
- Obstetric

MDC
- Based on the principal diagnosis area

Base DRG

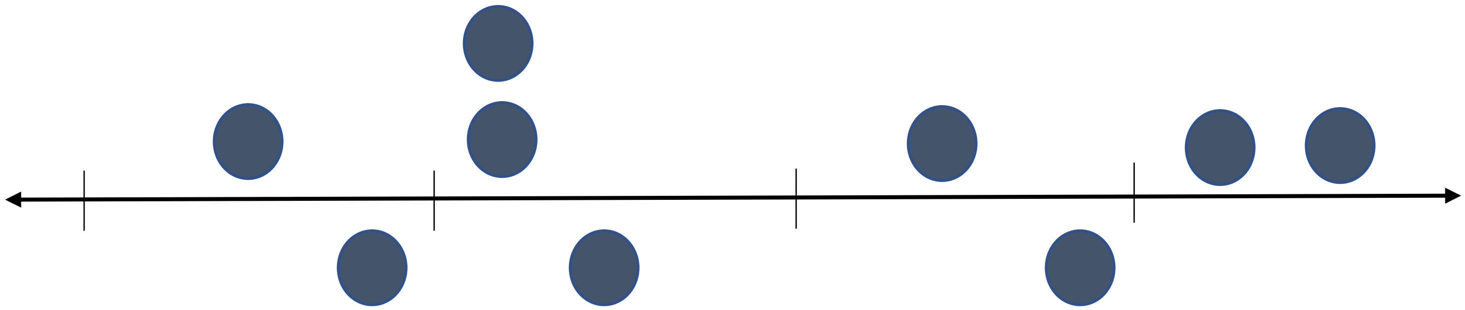
DRG
- W/O Complications
- W Complications
- W Major Complications

Diagnosis Related Grouper



Focus is on in-hospital setting

The Episode Grouper



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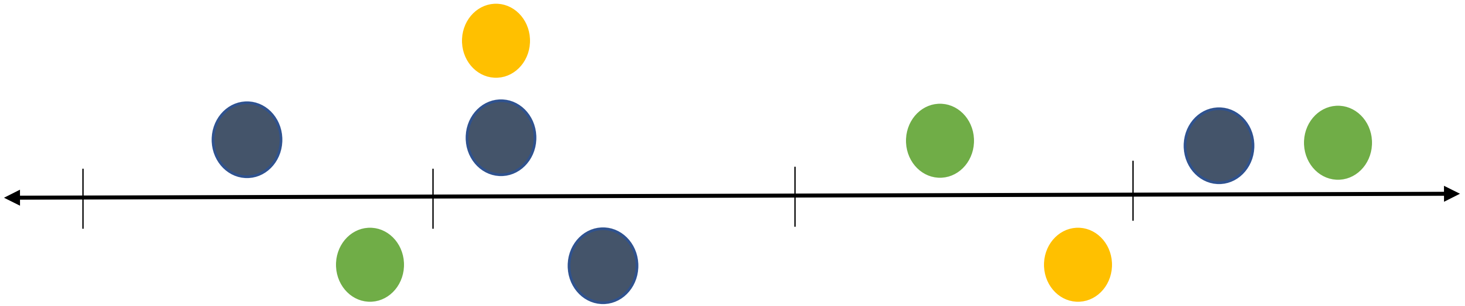
The Episode Grouper



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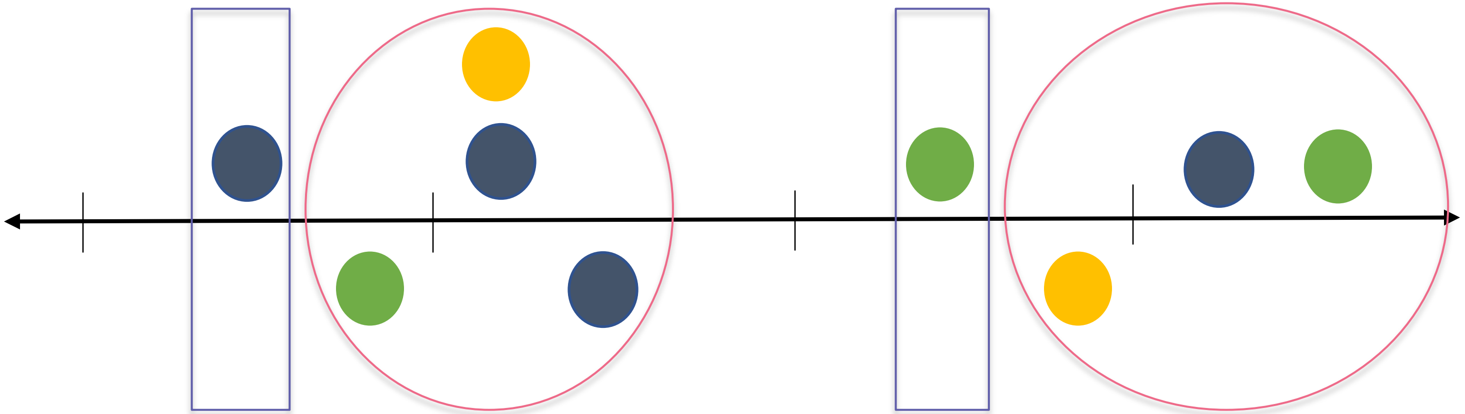
The Episode Grouper



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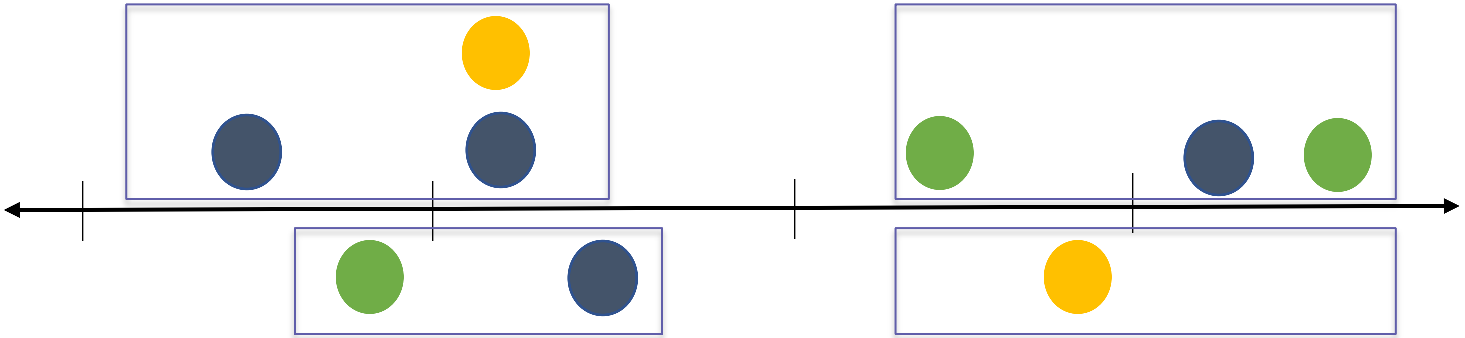
The Episode Grouper



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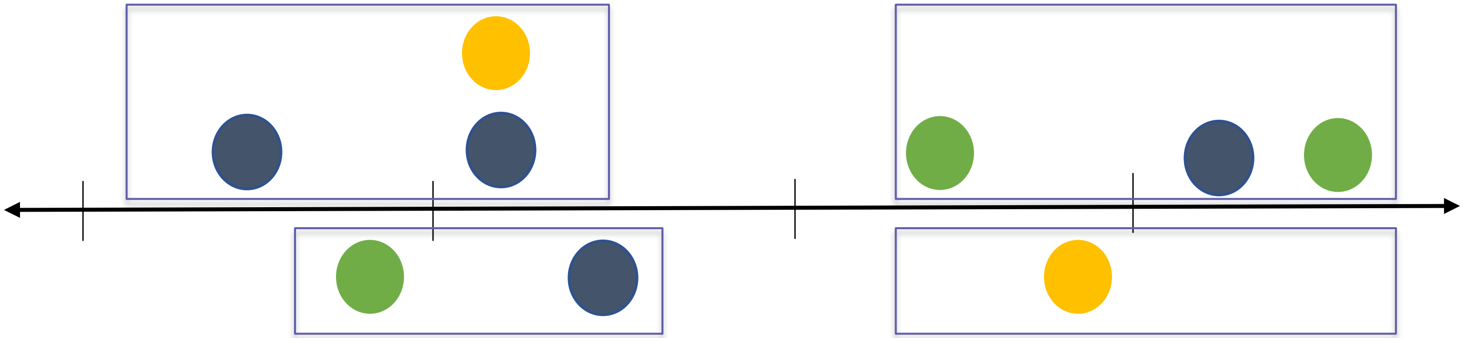
The Episode Grouper

Can categorize episodes at different levels of granularity



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...so what?

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Applications of the EPG

Risk Management

Identify main contributors to variations in care

Chronic disease management

Structuring ARMs

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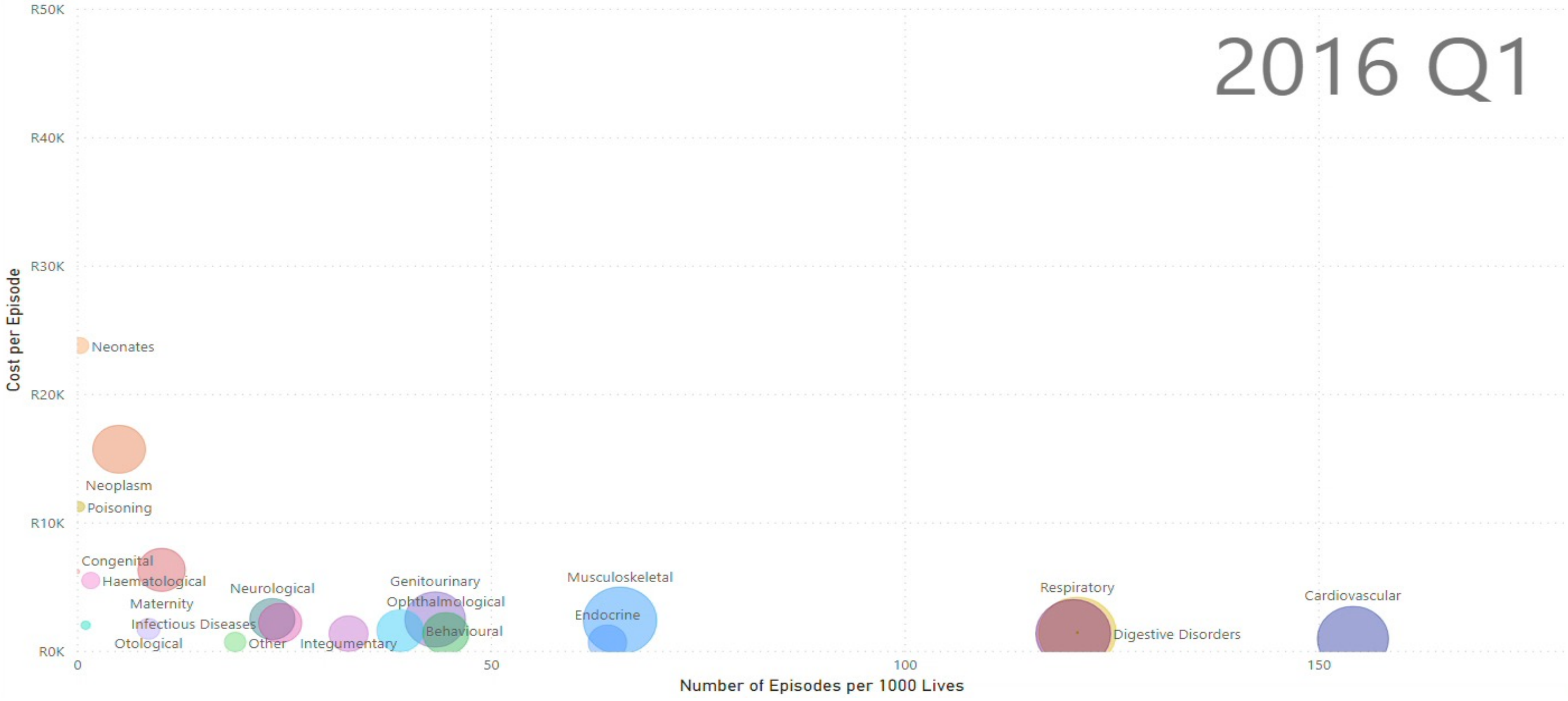
2016 Q1
Cost per Episode
R50K
R40K
R30K
R20K
R10K
R0K
Neonates
Neoplasm
Poisoning
Congenital
Haematological
Maternity
Infectious Diseases
Otological
Neurological
Other
Integumentary
Genitourinary
Ophthalmological
Behavioural
Musculoskeletal
Endocrine
Respiratory
Digestive Disorders
Cardiovascular
0
50
100
150
Number of Episodes per 1000 Lives

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Risk segmentation

Can look at recent episode history to better categorize current health status

The categories can become more granular

Significant condition

Healthy

High risk

Maternity

Major acute or non-life threatening chronic

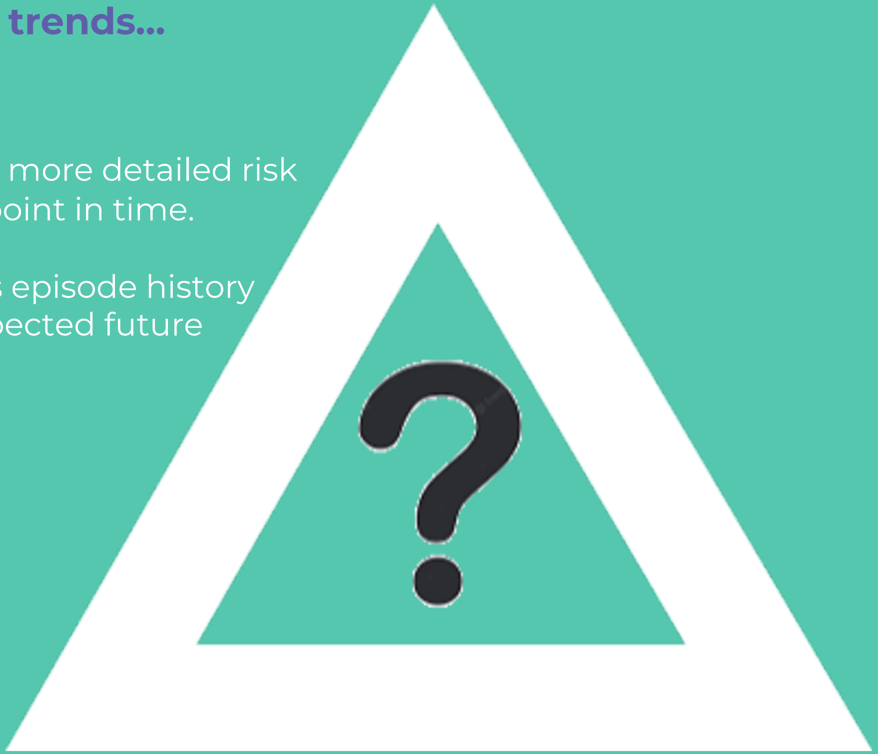
So we can analyze past trends…

… but what about the future?

So we can analyze past trends...

We can use the EPG to build more detailed risk profiles of lives at a specific point in time.

It is expected that a patient's episode history is a strong contributor to expected future experience.



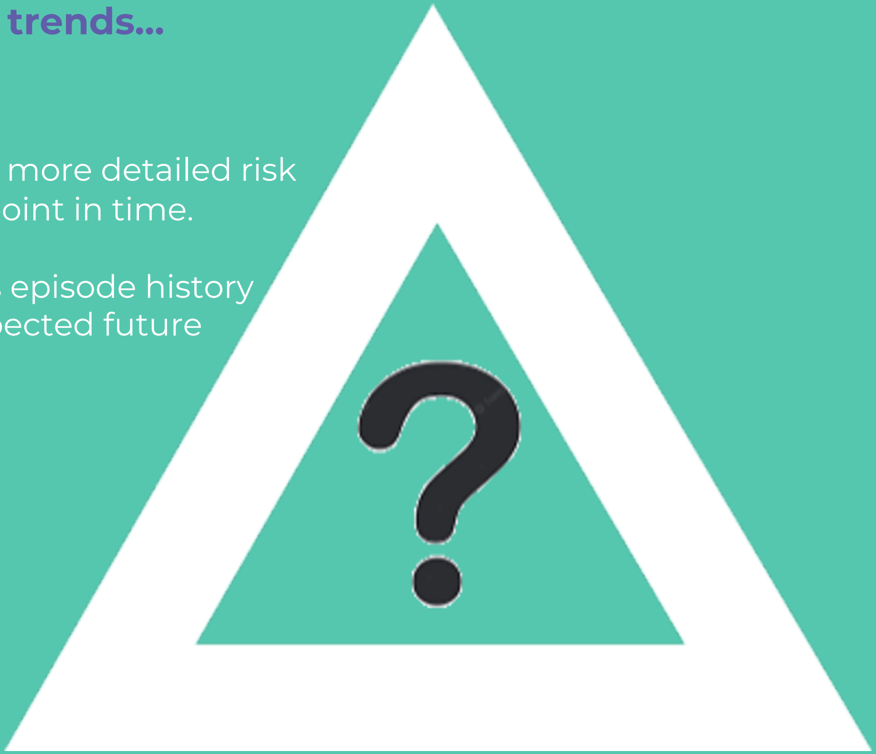
... but what about the future?

So we can analyze past trends…

We can use the EPG to build more detailed risk profiles of lives at a specific point in time.

It is expected that a patient's episode history is a strong contributor to expected future experience.

So let us use it.



… but what about the future?

GLM Model

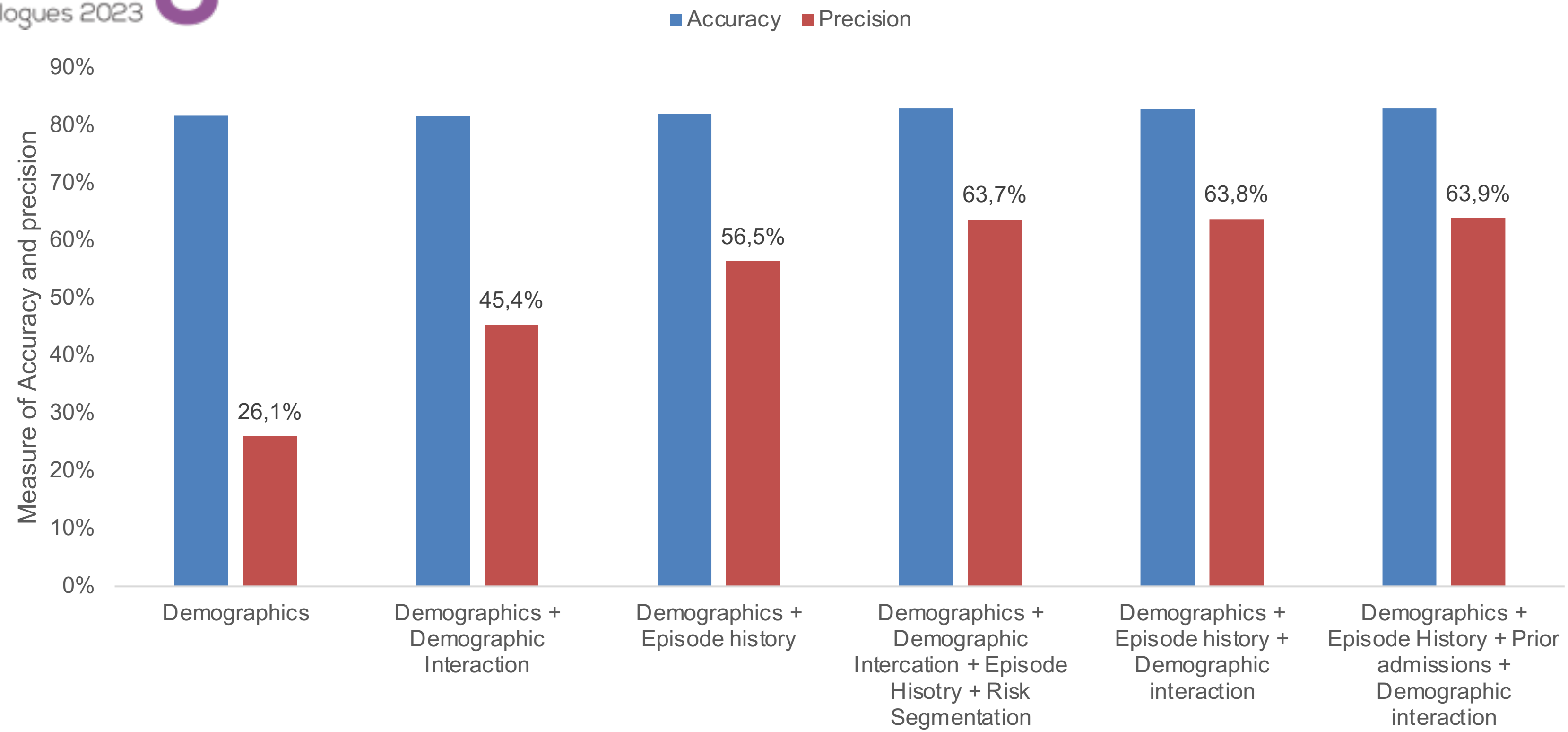
Given a member’s risk profile and episode history, what is their probability of any admission in the next year?

A GLM is easy to apply but there are many specifications to consider with numerous combinations of interactions between variables.

GLM Model

Accuracy → of all predicted values what % is correct

Precision → of all positive predicted values what % is correct



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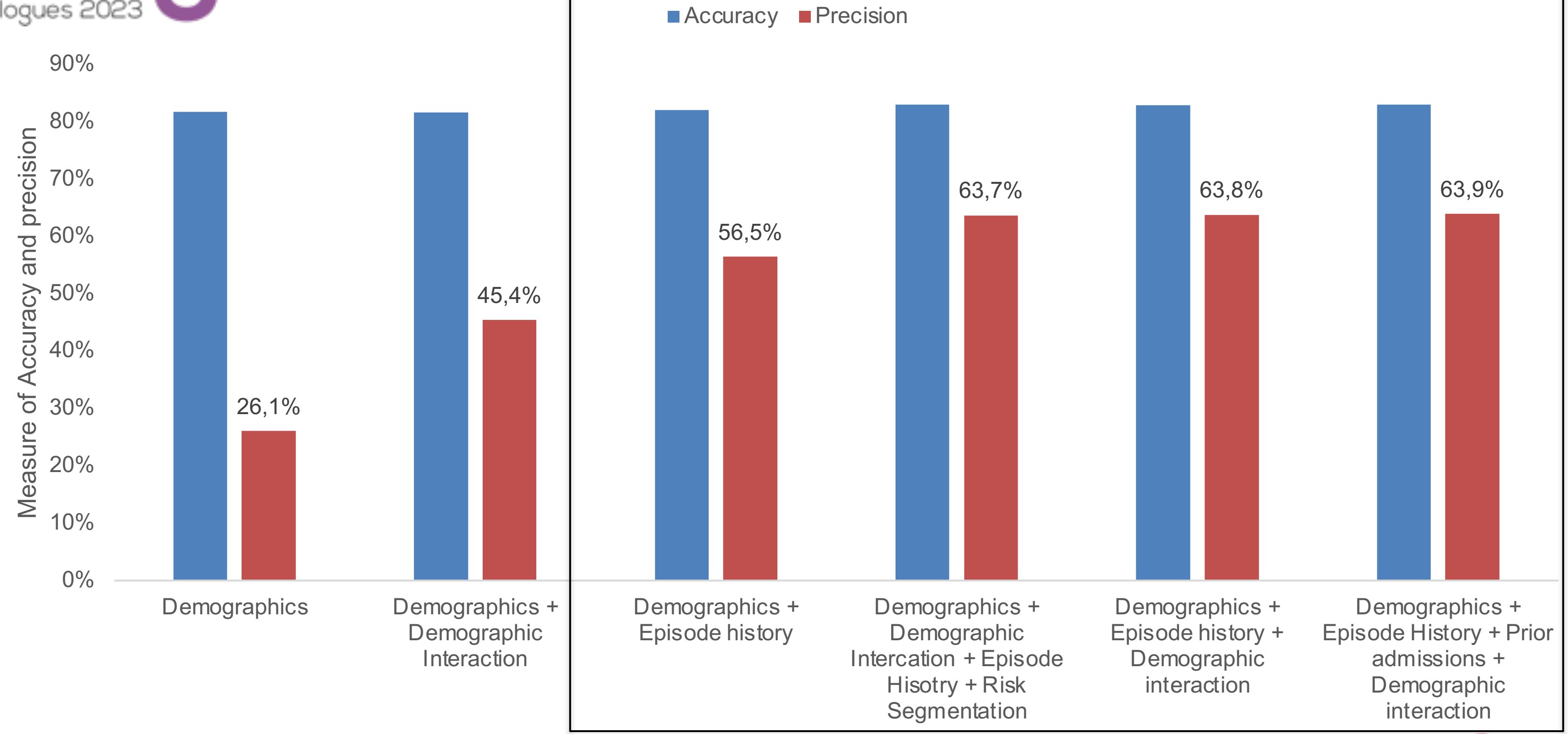

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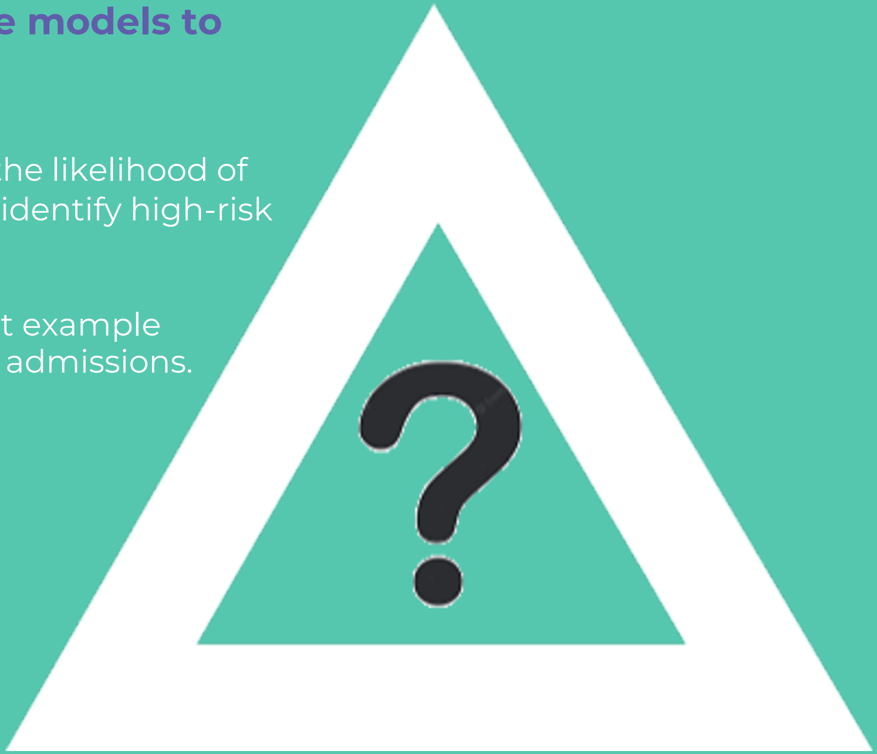
How can we tailor these models to guide interventions?

This approach to modelling the likelihood of admission can be applied to identify high-risk beneficiaries.

We could consider a different example focussing on a specific set of admissions.



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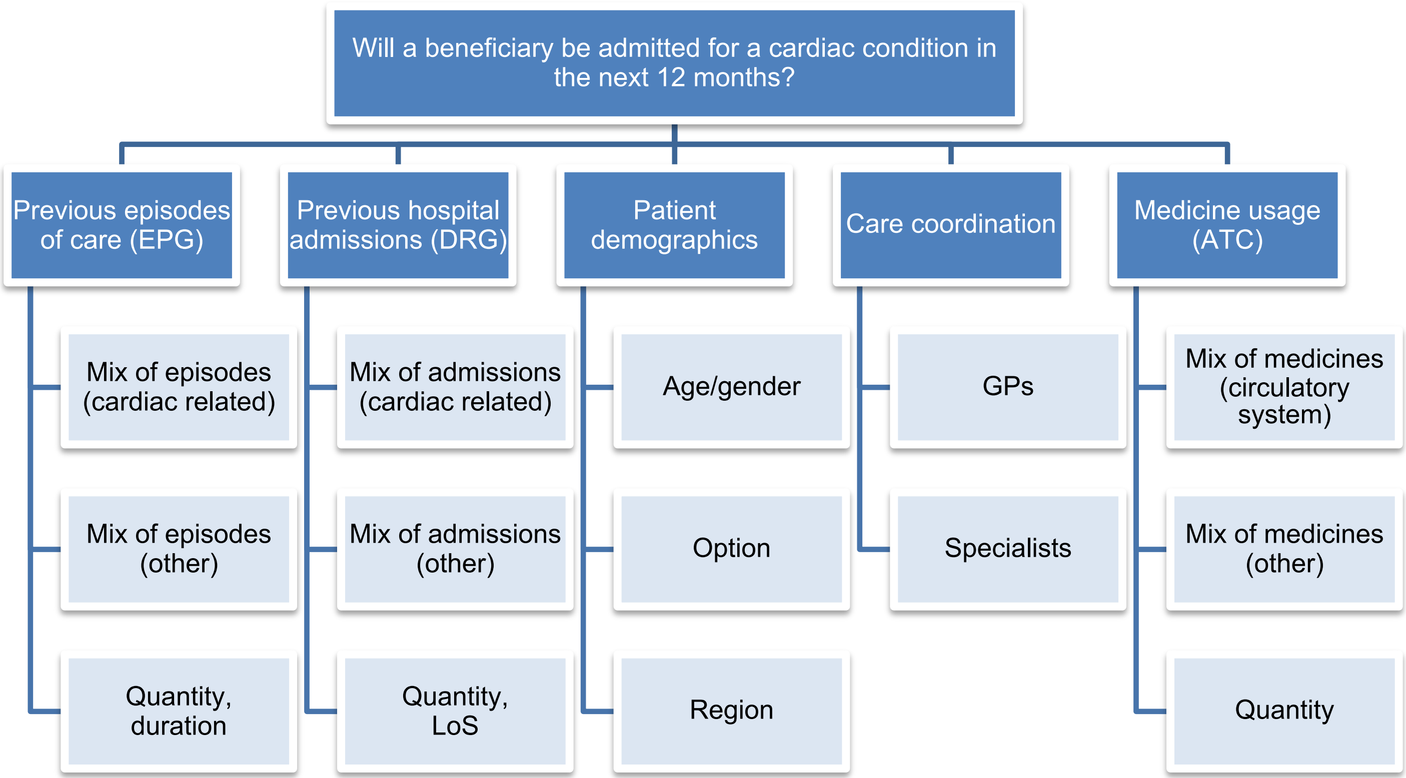
Cardiac admissions

Model can draw from various sources informing patient journeys



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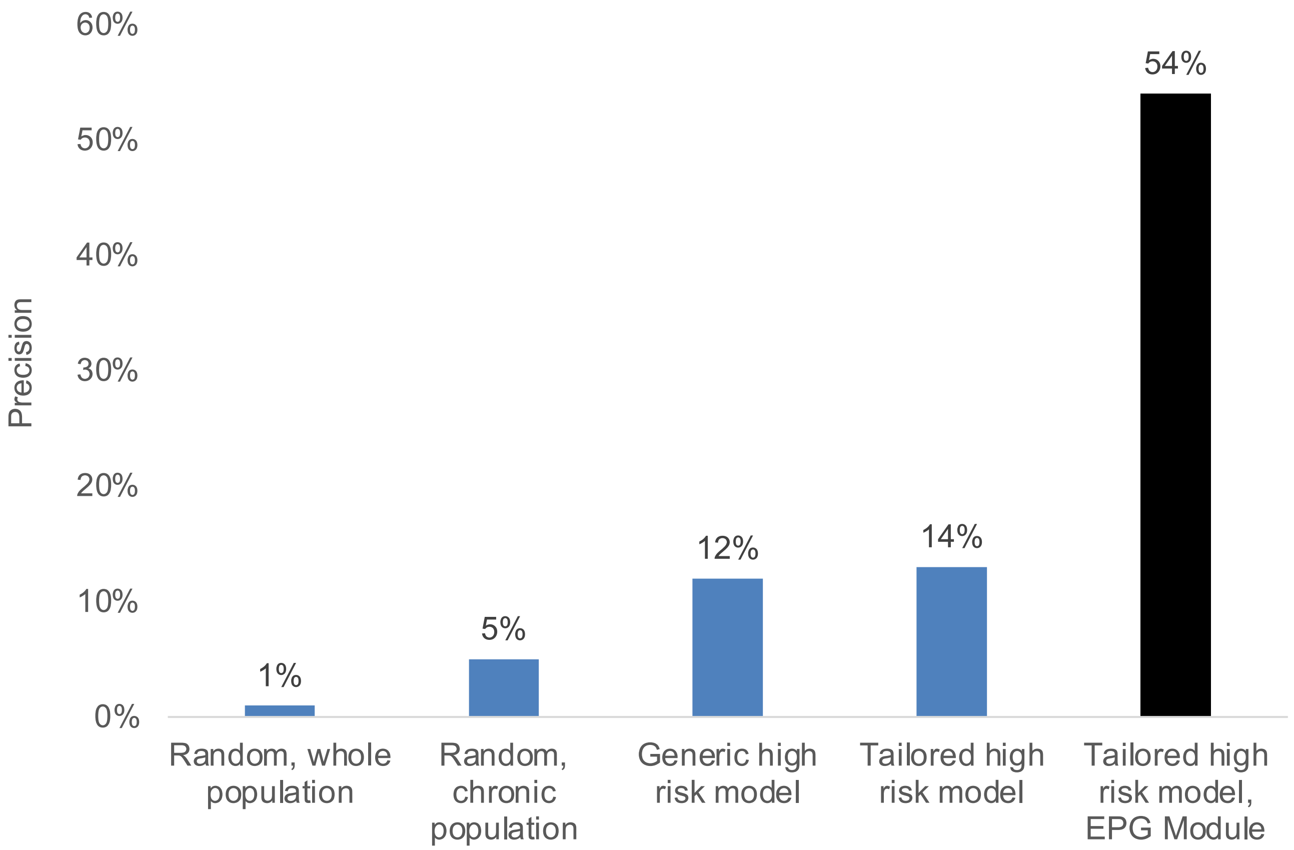
Cardiac admissions

Precision is of greater concern for assessing interventions



IT'S TIME TO UP YOUR GAME

Assessing interventions|
Weak modelling (14% precision)

1

The average admission costs R50,000

2

Assume the manage care intervention reduces the chance of a hospital admission by 20%

3

Assume that that the managed care intervention costs R1,000 per patient and is applied to 1,000 high risk patients

Assessing interventions| Weak modelling (14% precision)

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Assessing interventions| Weak modelling (14% precision)

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1. The average admission costs R50,000
2. Assume the manage care intervention reduces the chance of a hospital admission by 20%
3. Assume that that the managed care intervention costs R1,000 per patient and is applied to 1,000 high risk patients

The *1,000 high-risk beneficiaries* identified will be *responsible for 140 admissions* in the absence of managed care interventions. A 20% reduction in the admission rate means that *28 admission will be avoided and R1,400,000 will be saved*. The intervention will *cost R1,000,000*.

The net effect is **savings of just R400,000** and **only 28 beneficiaries will benefit**.

Assessing interventions|
Stronger modelling (54% Precision)

1

The average admission costs R50,000

2

Assume the manage care intervention reduces the chance of a mental healthcare admission by 20%

3

Assume that that the managed care intervention costs R1,000 per patient and is applied to 1,000 high risk patients

Assessing interventions| Stronger modelling (54% Precision)

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The average admission costs R50,000

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Assessing interventions| Stronger modelling (54% Precision)

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Assessing interventions|
Stronger modelling (54% Precision)

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The average admission costs R50,000

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3

Assume that that the managed care intervention costs R1,000 per patient and is applied to 1,000 high risk patients

The *1,000 high-risk beneficiaries* identified will be *responsible for 540 admissions* in the absence of managed care interventions. A 20% reduction in the admission rate means that *108 admissions will be avoided and R5,400,000 will be saved*. The intervention will *cost R1,000,000*.

The net effect is a **savings of R4,400,000** and **108 beneficiaries** will benefit.

insight

A way forward

Thank You.